

# Mathematical modeling of the technological accuracy index deviation structure of the automobile parts

Kasjanov S., Safarov D.

Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

---

## Abstract

© Published under licence by IOP Publishing Ltd. The technological components of the measured deviation of the accuracy index that arose during machining are ordered. Mathematical models have been developed to predict their magnitude during processing and also to find the causes of identified nonconformities in production, the components are ranked using the Pareto diagram.

<http://dx.doi.org/10.1088/1757-899X/412/1/012039>

---

## References

- [1] Statistical process control (SPC) Reference Manual. Issued 1992 2 (Chrysler Corporation, Ford Motor Company, and General Motors Corporation) Issued July 2005. Copyright ©1992, ©1995, ©2005
- [2] Safarov D T, Fedorova K A and Ilyasova A I 2016 Algorithms development of making special techniques in APQP manufacturing process of automotive components IOP Conference Series: Materials Science and Engineering 134 012036
- [3] Kas'yanov S V and Safarov D T 2004 Diagnostics of the technical condition of equipment and rigging in terms of technological accuracy Automotive Industry 24-28
- [4] Kas'yanov S V and Safarov D T 2007 Formation of deviations in quality indicators for product development Quality management methods 30-36
- [5] Kas'yanov S V and Safarov D T 2007 Productivity and effectiveness of methods for obtaining information about the quality of products Methods of quality management 40-47
- [6] Le Flohic J, Paccot F, Bouton N and Chanal H 2014 A ModelBased Method for PID Tuning Applied to Serial Machine-Tool Innovations of Sustainable Production for Green Mobility Energy-Efficient Technologies in Production Part 1 797-812
- [7] Jacobs H J, Jacob E and Kochan D 1981 Spanungsoptimierung (Berlin: Veb Verlag Technik) 280
- [8] Kas'yanov S V, Kondrashov A G and Safarov D T 2017 Regulation of Geometrical Parameters Deviations of Automotive Components Parts through Diagnostic Measurements Organization International Conference on Industrial Engineering ICIE 206 1508-14
- [9] Vasiliev V A, Odionkov S A, Borisova E V and Letuchev G M 2016 Methods of quality management of innovation process IEEE Conference on Quality Management, Transport and Information Security, Information Technologies 233-35
- [10] Kas'yanov S, Safarov D T and Kondrashov A G A method for diagnosing of the relative position and rigidity of tool rigs in boring operations in terms of the accuracy of the machined parts The patent of the Russian Federation for invention No 2496611 Bulletin No 30
- [11] Kas'yanov S, Safarov D T and Kondrashov A G The automated complex for diagnostics of turning technological system on indicators of accuracy of processed details The patent of the Russian Federation for useful model No 133040 bulletin No 28
- [12] Kas'yanov S, Safarov D T and Kondrashov A G Complex for diagnostics of the turning technological system in terms of the accuracy of the parts being processed The patent of the Russian Federation for utility model No 133039 Bulletin No 28